

Aero Design Ltd.**Work Order Control Sheet**Work Order#: 2015-26 Date Opened: 10 Mar 2015 Title: FabricationAircraft OEM: Eurocopter Aircraft Model: AS350/355 Product Type: Mount hoops Product Model: Ski Quantity: 10**Work Order Contents**

	Initial or N/A
Work Order/Build Sheets (Procedures Provided)	JR
Additional Work Sheets (Standard Practice)	N/A
Drawings (See List Below)	JR
Parts Distribution Sheet	JR
Sub Component Tags	N/A
Completed Certification	N/A
Time Sheet (R&D)	N/A
Notes	N/A

Build Sheet Contents

	Initial or N/A
Tasks Initialled	JR
Dual Inspections Initialled	JR

Drawing List

Drawing #	Rev #	Description	Initial or N/A
76423	2	Attachment Hoop	JR

Traveller

Initial or N/A

Work performed by:

Print: Jason Rekve

Sign: Jason Rekve

ICC / Dual Inspection performed by:

Print: Jeff Clarke

Sign: Jeff Clarke

Work Order closed by:

Print: Jason Rekve

Sign: Jason Rekve

Approved Manufacturing Facility 73-04

Form 20-D-03

Component Completion

Quantity Complete on This Work Order
Quantity Incomplete on This Work Order
Further Processing Required Before Release
Release to Stock as Components

As Instructed

10
N/A
N/A
JR

Certification

Form One Completed
Serviceable (Green) Tag Completed
In Process (Yellow) Tag Completed
Unserviceable (Red) Tag Completed
Parts Tracking (White) Tag Completed
Parts Placed in Stores for Distribution

Initial or N/A

N/A
N/A
N/A
N/A
JR
N/A

Additional Documentation

Documentation of a minor change
Non-Conformance Report Required
Service Difficulty Report Required

Initial or N/A

N/A
N/A
N/A

Billing

Local (Aero Design)
Research and Development
Third Party

Initial or N/A

JR
N/A
N/A

SCA: AD01

Date: 12-Mar-15

SCA: AD02

Date: 12-Mar-15

SCA: AD01

Date: 12-Mar-15

Rev. Original 23 Sep 2014

CARGO BASKET HOOP FABRICATION - 94023

General

These instructions apply to cargo basket attachment hoop 94023-01. Refer to the following drawings, at the current revision, for dimensions and details:

94023, Revision 0 – Attachment Hoop

84262, Revision 1 – Handle Bracket Assembly

Work Order: 2015-26

Date Open: 10 Mar 15

Complete
(initial or SCA #)




1. ½ Hoop Fabrication – ½" hoop

- a. Cut ½" x 0.035 material to 23.0", square ends.
- b. Record material PO on attached material list.
- c. De-burr cut ends using a sanding disc on a die-grinder or disc sander.
- d. Remove writing on tubes with acetone and scotch bright.
- e. On the hoop bending fixture, set the following stops:
 - i. Upper tube stop: ??"
 - ii. Lower bend stop: 12mm
- f. Slide stock tube through bending die up to upper stop. Rotate bending arm clockwise until tube is secure, ready to bend. Ensure tube remains tight to upper stop.
- g. Slide shim all the way forward on bender to secure tube in die
- h. Pull bending arm clockwise until stop is reached. Pull slowly with consistent pressure.
- i. Check tube bend for square using a hoop jig or carpenters square. Adjust stops if required.
- j. Check for:
 - i. hoop height: 18" (Outside to outside)
 - ii. adjust upper stop for height if required



2. ½ Hoop Machining – ½" hoop – Handle Provisions 84262-01

- a. Start with ½" half hoop from step 1.
- b. Setup manual milling machine with specific hoop vise jaw. Set XY 0 on far, right edge of jaw (end of hoop).
- c. Drill 2 places, 5/16" (0.313) holes using 5/16" (#4) centre drill through both sides in accordance with drawing. Run at 500 RPM. Apply a few drops of Rapid-Tap cutting oil to each location before drilling.
 - i. locate 0.23" from edge (within tolerance specified on drawing).
- d. Wipe or blow off cutting oil and de-burr with scotch-brite disc on die-grinder.
- e. Tag in process hoop(s) and place into stock.



3. ½ Hoop Fabrication – 1" hoop

- a. Cut 1" x 0.065 material to 30.0", on end square, one end @ 16 degrees.
- b. Record material PO on attached material list.
- c. De-burr cut ends using a sanding disc on a die-grinder or disc sander.
- d. Remove writing on tubes with acetone and scotch bright.
- e. On the hoop bending fixture, set the following stops:
 - i. Upper tube stop: ??
 - ii. Lower bend stop:??
- f. Slide stock tube through bending die up to upper stop. Rotate bending arm clockwise until tube is secure, ready to bend. Ensure tube remains tight to upper stop.
- g. Slide shim all the way forward on bender to secure tube in die
- h. Using a long snipe tube, pull bending arm clockwise until stop is reached. Pull slowly with consistent pressure.
- i. Check tube bend for angle using hoop jig. Adjust stops if required.
- j. Check for:
 - i. hoop height from jig
 - ii. adjust upper stop for height if required
 - iii. length to allow 60 degree cut.
- k. Using hoop jig, mark for 60 degree cut on bottom end. Cut to length.
- l. De-burr cut end using a sanding disc on a die-grinder or disc sander.

4. ½ Hoop Machining – 1" hoop



- a. Start with 1" ½ hoop as stock.
- b. Setup manual milling machine with standard steel vise jaws. Insert hoop into vise flat on bottom of vise, 16 degree side on right. Set XY 0 on far, right edge of hoop (end of hoop). Shift X along hoop 0.75" and set X 0. Shift Y -0.5". Set stop against end of tube.
- c. Drill two places, 5/8" (0.625) holes using 5/8" (#7) centre drill through both sides in accordance with drawing. Apply a few drops of Rapid-Tap cutting oil to each location before drilling.
- d. Wipe or blow off cutting oil and de-burr with scotch-brite disc on die-grinder.
- e. Set tube in vise with 60 degree end on right.
- f. Using ½" coated carbide end mill, mill slot 2.25" deep (edge to edge, 2.0 edge to centre). Apply a bead of Rapid-Tap cutting oil along cut line before milling.
- g. Wipe or blow off cutting oil and de-burr with scotch-brite disc on die-grinder.
- h. Tag in process hoop(s) and place into stock.

5. Joint Preparation



- a. Set 1" hoop in hoop jig. Insert ½" hoop into 1" hoop, against side stop of jig. Mark slot location in 1" hoop onto ½" hoop. Trim ½" hoop with vertical bandsaw if required, and shape to match slot with disc sander.
- b. Insert one 94023-05 lug (flat end) at top and 94023-07 lug (angled end) at bottom into holes in 1" hoop. Seat top lug flush with inboard face of tube using a C-clamp or vise. Attach 16 7/8" spacing jig with 3/8-24 bolts to lugs and space jig 7/8" out from hoop. Mark 94023-07 lug and trim or grind to fit.

AD-05

6. Welding – Lugs

- a. Insert one 94023-07 lug (flat end) at top and 94023-05 lug (angled end) at bottom into holes in 1" hoop. Seat flush with inboard face of tube using a C-clamp or vise. Attach 16 7/8" spacing jig with 3/8-24 bolts to lugs and space jig 7/8" out from hoop.
- b. TIG weld all around both sides of lugs. 2 places. Grind angled lug into radius of hoop before welding.
- c. Record lug and welding rod PO/WO on attached material list.

7. Welding – Handle Bushings – 84262-01

AD-05

- a. Insert 84271-01 bushings into ½" hoop prepared in step 2. above.
- b. TIG weld bushing both sides, 2 bushings per hoop.
- c. Record bushing and welding rod PO/WO on attached material list.

8. Welding – Hoop Assembly

AD-05

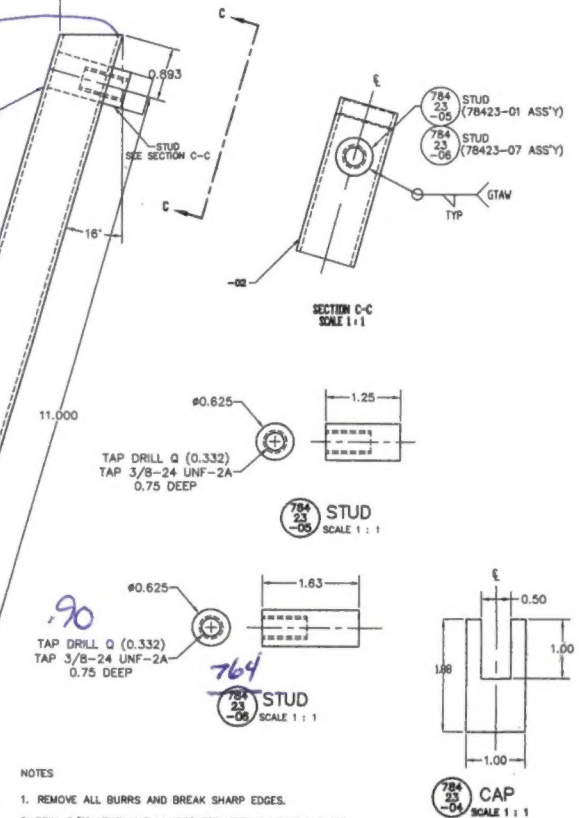
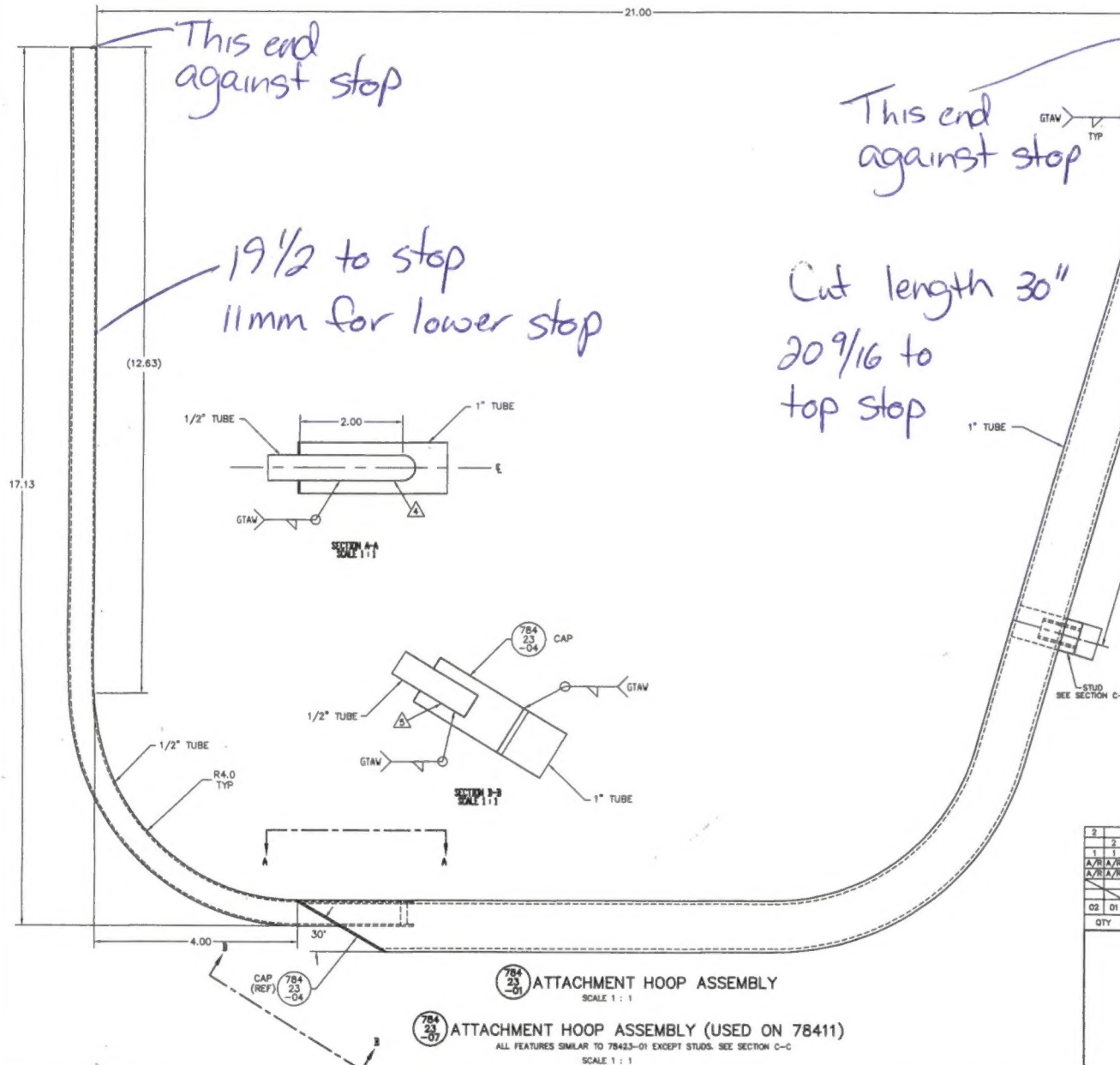
- a. Insert 1" hoop from step 6 and ½" hoop from step 7 into hoop jig. Seat ½" hoop into slot in 1" hoop.
- b. Tack weld hoops together, minimum 4 places, to hold hoop together to complete welds out of jig.
- c. TIG weld around ½" hoop in slot.
- d. Cap ½" – 1" tube joint with 76423-04 cap. TIG weld around cap.
- e. Record cap and welding rod PO/WO on attached material list.

9. Finishing and Inspection

AK

- a. Run 3/8-24 tap through welded lugs.
- b. Grind inside surfaces flush at lugs and slot in 1" tube.
- c. Inspect hoop for conformity to drawing.
- d. Tag complete and inspected hoop(s) and place into stock.

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REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
0	INITIAL ISSUE	RRR	24 JAN 08
1	ADDED 78423-07 ASSY AND 78423-06 PART	RRR	05 MAR 09
1	CHANGED LENGTH OF STUD (ITEM 05)	BUC	16 JUNE 10



- NOTES
1. REMOVE ALL BURRS AND BREAK SHARP EDGES.
 2. DRILL 3/32 VENT HOLE IN HOOP FOR VENTING OF WELD GASES.
 3. WELDING OF 4130 STEEL TO BE COMPLETED BY GTAW METHOD TO AMS2685C. WELDING ROD SHALL CONFORM TO AMS E705-2 OR EQUIVALENT.
- ⚠ MILL SLOT INTO ITEM 1" TUBE AS SHOWN. CONTOR END OF 1/2" TUBE TO MINIMIZE GAP BETWEEN 1" TUBE AND ITEM 1/2" TUBE.
- ⚠ ADJUST SLOT OF CAP (78423-04) TO FIT AS REQUIRED.

2	2	78423-06	06	STUD	MILD STEEL	AMS 1010/1020	Ø0.63 ROD
		78423-05	05	STUD	MILD STEEL	AMS 1010/1020	Ø0.63 ROD
1	1	78423-04	04	CAP	MILD STEEL SHEET		0.025 SHEET
A/R/A/R			03	TUBE 1/2IN	4130 STEEL COND. N	MIL-T-8736	0.5 X 0.035 SQR TUBE
A/R/A/R			02	TUBE 1IN	4130 STEEL COND. N	MIL-T-8736	1 X 0.065 SQR TUBE
		78423-07	07	ATTACHMENT HOOP ASSEMBLY	(USED ON 78411)		
		78423-01	01	ATTACHMENT HOOP ASSEMBLY			
Q2	Q1	PART NO.	ITEM	DESCRIPTION	MATERIAL	MATERIAL SPEC	STOCK SIZE
LIST OF MATERIALS							
APPROVALS				DATE			
DRAWN: R. RATHWELL				24 JAN 08			
CHECKED: E. BURDON				<div><div>AERO DESIGN LTD.</div><div>CONSULTING ENGINEERS, TRANSPORT CANADA APPROVALS, DAR 890M 3015 - 30TH AVENUE N.E., CALGARY, ALBERTA, CANADA, T2E 6R7 Tel: (403) 266-8887 Fax: (403) 266-8888 www.aerodesign.ca</div></div> <div>AS350 & AS355 SERIES QUICK RELEASE CARGO BASKET ATTACHMENT HOOP ASSEMBLY</div> <div>SCALE 1 : 1</div> <div>SHEET 1 OF 1</div> <div>A1764232</div>			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON:							
DECIMALS ANGLES							
X.XXX ±0.010 ±1/2"							
X.XX ±0.03							
X.X ±0.1							



WO# 2015-26

Approved Manufacturing Facility 73-04

Form 20.F.06

Rev. Original 27 May 2013